

JOSEPH G. NASSIF

REPLY TO ST. LOUIS

January 9, 1991

Mr. Steven Siegel  
Assistant Regional Counsel  
U.S. Environmental Protection Agency  
5CS-TUB-3  
230 South Dearborn  
Chicago, Illinois 60604

Re: NL Industries/Taracorp, Customer Class Carve Out  
Proposal

Dear Mr. Siegel:

Since it was not possible for the parties to meet this week, the Customer Carve Out Group agreed to respond in writing to your letter of December 24, 1990 by January 9, 1991. Before we address the specific points contained in your letter, we thought it important to clarify our position. There is a group of customers who are interested in proceeding with the remedy on the basis of a carve out. We have proposed in our letters to EPA that this carve out involve acceptance of the clean up levels set forth in the ROD, performance of the remedial design in conjunction with a pilot study on tilling, and implementation of the remedy up to a maximum of 35%. There are other points in our proposal including selection of tasks, preservation of rights against NL, etc. It is important that you understand that it is not anyone's intention to delay the remedial design or the remedy in any way while the tilling study is being done. We, too, are interested in a solution which is protective of human health, considers all appropriate technology and does not slow down implementation of the remedy. We believe that our proposal is consistent with all of these elements and represents a no lose position for Region V. Region V will obtain acceptance of its cleanup level without a customer challenge plus implementation of a substantial portion of the remedy, as well as the completion of the remedial design.

As I indicated to you, there are a number of the major customers who have not yet committed to this proposal. They have indicated in our on going discussions that if we can obtain a commitment to a tilling study of the sort attached



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hereto, that they will seriously consider settlement. This would give us the possibility of making a commitment consistent with Point 1 of your letter of December 24, 1990. Without a tilling study, there can be no commitment to implementation of 35% of the remedy.

If a study of tilling is not included in the proposal, less than 50% of the viable customers by volumetric share will participate. This will force the remaining customers to pay several times their respective volumetric shares in order to pay for 35% of the remedy. If EPA is firm on both points 1 and 4, you will face a united front, including N.L., in any litigation. This is just what N.L. would like to see EPA do. On the other hand, if the EPA will commit to a study of tilling in conjunction with the remedial design investigation, there is an excellent chance that a customer group will agree to implement 35% of the remedy.

While we agree that further discussion is necessary, we do not believe that Points 2 or 3 of your letter will keep the parties from reaching an agreement. However, Point 4, particularly in combination with point 1, is a deal breaker.

There is nothing in our proposal which is necessarily inconsistent with the Record of Decision. The Record of Decision calls for remediation of soils with lead levels above 500 ppm. The tilling study would look at whether or not soils can be remediated, consistent with the ROD, without the need for excavation. If the study shows that tilling is not effective, excavation would be the remedy used to reduce lead levels. Performing a tilling study is consistent with Dr. Elias' article\* which was discussed in AT&T's December 28, 1990 letter, and has been used at several different sites.

As you know, in a number of these sites, tilling was tested and not used for various reasons. These reasons in each instance are related to site-specific conditions. Although tilling was not found to be usable in the Baltimore situation, in our conversations with Dr. Elias we learned that tilling is still being tested in Cincinnati. The main constraint to utilization of this technology is the requirement that the

\*As you requested, attached hereto is a copy of the cover of the book from which Dr. Elias' article was taken.

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surface and subsurface soils allow for tilling. In the Baltimore situation it was found that the inner city surface and subsurface conditions were not conducive to tilling. However, according to the Madison County, Illinois Soil Conservation Service Report and conversations with ISCS personnel, the soil types at and about the Granite City site are favorable to tilling. The soils in the Granite City, Illinois area are alluvial deposits comprised of silty soils with pockets of sand and gravel. Specifically, the following areas and their soil series demonstrate the potential for tilling to work at the site: Granite City - Beaucoup Series - silty clay loam; Madison - Rozetta Series - silty clay loam; and outer margins of Madison - Tice Series - silty loam and Landes Series - very fine sandy loam.

The results of the Exide work in Selma, Alabama using tilling to abate elevated levels of soil to a level below 500 ppm are very impressive. The information collected by Exide before and after tilling, previously provided to EPA, demonstrates that on an average for all front lawn tilling locations there was a reduction factor of 13.5 fold for those locations with specific lead concentrations. This factor represents about the expected soil-lead reduction when a 1" layer of contaminated soil is mixed or blended over an approximate 12" layer of soil. We have recently had our technical people go back and review the soil lead profiles at the Granite City site, and based on that review and the information received from ISCS it appears that tilling has a high probability of success in the Granite City situation.

Throughout our discussion, EPA has expressed reservations that a pilot scale study of tilling would stall implementation of the remedy. Following our phone conversation, we put together a remedial design time line. Although we have not finalized the time line, what we have learned is that it will take much more time to complete the Remedial Design Investigation (RDI) then it will take to conduct the pilot scale study. GM has projected as part of the time line review that it will take about twice as long to conduct the actual residential soils field work portion of the RDI (not including the ditch and alley driveway work) as to do the fieldwork for a pilot scale study on tilling. Performing the RDI parallel with the tilling study will not delay remediation at all. In fact, if tilling is found to be effective it will substantially reduce the time necessary to complete remediation.

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EPA should not lose sight of the fact that if it agrees to the pilot study on tilling, it would substantially improve its case against any non-settling PRPs. In particular, it will put substantial pressure on non-settlers to reach an agreement not only with the settling customers but with the EPA as well. Following our conversation on January 5th, a group of the customers, not otherwise involved in litigation with N.L., made an effort to bring N.L. into this process. N.L. has been calling some of the customers, saying that it was interested in reaching a resolution. The Customer Carve Out Group also met with some of the customers who have been involved in litigation with N.L. Discussions with N.L. have stopped because they did not live up to their commitment to provide the customers with an allocation percentage. As you know, the customers have been requesting a percentage from N.L. since 12/18/89. Their latest letter, a copy of which was sent to you, does not reflect what actually took place during our discussions.

In our conversation of January 5, 1991, you expressed concern as to whether there would be sufficient time to review the results of the study. We have already addressed the fact that there should be sufficient time to review the results while the remedial design investigation is proceeding. Also, there is quite a bit of work that will need to be done before that portion of the work which might involve tilling could be started. In addition, we have given some thought as to how we might set up a credible group of experts to look at the tilling results to see if the design parameters of the study have been met. Essentially they would serve as an independent review of whether or not the tilling remedy will meet the cleanup parameters in the ROD. This group would not be asked to make any changes to the cleanup parameters.

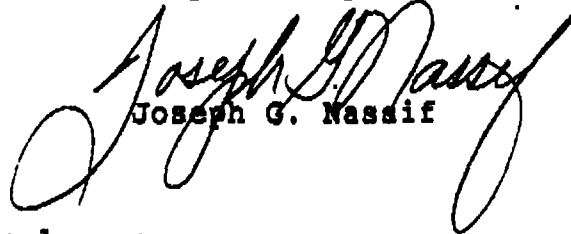
We have learned that Dr. Renate Kimbrough, who was formerly with the Centers for Disease Control and who currently holds the position of Director of Health and Risk Capabilities, U.S. EPA, Washington, D.C., will be leaving the agency sometime during the month of February. Dr. Kimbrough has extensive background in the toxicity and absorption of lead. Dr. Kimbrough might be willing to chair the review group. We would also suggest including within this group Dr. Robert W. Elias, who is currently with the Environmental Criteria and Assessment Office, U.S. Environmental Protection Agency, Research Triangle Park. As you know, Dr. Elias has written on this very subject and I believe he is speaking at the seminar you and Brad are attending in Colorado pertaining to soil lead abatement. The third member of the group would be someone assigned to represent Region V. The last member of the group would be an

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expert selected by the settling customers. We believe this approach should satisfy any concerns that the agency, the settling customers, or anyone else might have regarding review of the results of the tilling study.

As far as the other items which follow point #4 in your letter, we do not see any of these as posing a threat to the successful conclusion of the negotiations. There is very little risk to the EPA in agreeing to go forward with the tilling study and a tremendous benefit to such an agreement. We would propose that the same parties meet on January 15, 1991 in your offices. We believe that shortly after this meeting we will know whether an agreement is possible.

Very truly yours,

  
Joseph G. Nassif

JGN/cn/27850  
Enclosures

cc: Mr. Brad Bradley - w/enclosures  
Mr. Alan Held - w/enclosures  
Mr. Alan Schlesinger - w/enclosures  
Mr. David Butterworth - w/enclosures  
Mr. Stuart Williams - w/enclosures  
Mr. Mark Hester - w/enclosures  
Mr. Dan Bicknell - w/enclosures

PILOT SCALE STUDY

SOIL TILLING

(Prepared and Submitted by Settling Generators)

Project Description and Site Background

This document presents a protocol to conduct a pilot scale study for evaluating the site-specific implementability of the soil-tilling technology in treating lead contaminated soil at the NL Industries/Taracorp Superfund site in Granite City, IL. Site soils containing lead between 500 ppm and 1,000 ppm may be treated using soil-tilling, in lieu of excavation and capping, to achieve the EPA Record of Decision performance standard of 500 ppm soil-lead. Site soils containing lead greater than 1,000 ppm will be part of this study to define the limits of tilling to abate elevated lead concentrations in soil.

This site is a mixture of industrial, commercial and residential areas which may have been historically impacted by lead emissions from the past NL Industries/Taracorp secondary lead smelter. Residential soil-lead levels have been evaluated as part of the RI/FS for this site. Local soil conditions may accommodate the utilization of soil-tilling to reduce soil-lead concentrations. The soils in the Granite City area are alluvial deposits comprised of silty soils with pockets of sand and gravel (i.e., Beaucoup Series - silty clay loam, Rosetta Series - silty clay loam, Tice Series - silty loam, Landes Series - very fine sandy loam).

Remedial Technology Description

Tilling of soil is an existing technology that uses standard garden or farming equipment to reduce the level of surface contamination by mixing with subsurface soil or replacement soil. The technique utilizes the physical and chemical properties of lead which tend to fix lead in the upper horizon of the soil. The mixture of this

upper soil layer with lower soil regions or non-contaminated soil generates a reduction in soil-lead levels. This technique has been evaluated as a component of remediation at a number of lead contaminated sites and is a method of choice in the draft Minnesota Pollution Control Agency - Rules for Soil Lead. In addition, at the Lead in Soil: Issues and Guidelines conference (sponsored by the U.S. Environmental Protection Agency, International Lead Zinc Research Organization, Lead Industries Association, The Society for Environmental Geochemistry and Health, and Clemson University College of Sciences/College of Engineering held in Chapel Hill, North Carolina on March 7-9, 1988), Dr. Rob Elias from the U.S. EPA Environmental Criteria and Assessment Office presented a paper titled "Alternatives to the Removal of Lead-Contaminated Soil" in which soil mixing was discussed as a potential option for remediation of lead-contaminated soil.

### Test Objectives

The purpose of this study is to demonstrate that local conditions at the site allow the utilization of soil-tilling technology to abate the elevated levels of lead in residential soils between 500 ppm and 1,000 ppm to the ROD performance standard of 500 ppm soil-lead, in lieu of excavation and capping. Soil-lead samples will be obtained from test plots before and after tilling to determine the implementability of this technology. If the data indicate that tilling reduces the concentrations of surface soil-lead to 500 ppm or less, then the technology will be deemed to be technically feasible and acceptable to attain the ROD performance standards at this site.

### Pilot Scale Protocols

#### Field Tilling Protocol

The evaluation of the tilling technology will require the establishment of test plots in a representative residential area where soil-lead values are between 500 ppm and 1,000 ppm. Additionally, to determine the potential limits of soil-tilling to abate elevated soil-lead values, a couple of test plots will be identified with lead concentrations greater than 1,000 ppm. Tilling will be conducted in these test plot areas with surface (0" - 3") samples obtained before and after the blending of the soils. The following is the field tilling protocol to implement the pilot scale study.

\* Fifteen representative residential area plots of 15' by 15' will be selected for the study and they ideally will exist in one common location such as a park. These areas will have soil-lead samples obtained at the following intervals: 0"-3"; 4"-6"; 7"-12"; 13"-18" and 19"-24" levels, after the removal of the vegetative layer, using a hand auger. These samples will be analysed to determine the concentrations of total lead.

\* The fifteen test plots will be divided into three sets. Each set of five representative test plots will be tilled to a depth of either: 12", 18", or 24". These three sets of varyingly tilled depth plots will allow one to observe the benefits of deeper tilling in the attainment of the performance standard.

\* A survey of different types of tilling equipment will be performed to determine the most applicable type of tiller or combination of mixing/blending equipment for the soil conditions at the site.

\* A rototiller and/or other comparable tilling equipment will be used to mix/blend soils to a depth of approximately 12", 18" or 24" below the surface of the soil matrix in each set of test plots. This will manifest a mixing of soils, thereby potentially reducing the soil-lead concentrations in the surface soil horizon. Continual passes of the tiller and/or comparable tilling equipment will be made until there is uniformity of the soil within the test plot. Soil will be recontoured, adding soil as necessary, to meet the original grade.

\* After completion of soil mixing/blending, nine representative soil samples will be collected from a depth of 0"-3" below the ground surface within each test plot. These samples will determine if the soil meets the ROD performance standard of 500 ppm by using the null hypothesis - there is no difference between surface soil-lead concentrations and the performance standard. Additionally, a representative soil sample from a depth of 4"-12", 13"-18" or 19"-24" below the ground surface will be collected from the same sample locations as the above surface sample depending upon the tilling depth of the test plot.

\* Test plots will be sodded with grass after the study is completed in each plot. A few general soil samples will be analyzed for physical parameters to determine if soil conditioning is necessary to promote long-term vegetative growth. The type of vegetative cover will be selected to promote long-term growth.

\* If a majority of test plots, within either variant depth set of plots, indicate that tilling decreases surface soil-lead levels below 500 ppm, then the technology will be deemed as technically feasible and acceptable to attain the ROD performance standards at this site. The exact tilling technique or techniques which will be used as the final tilling remedial action will be based upon the results from the three different set of variant depth test plots. It may be possible that under certain remedial action scenarios that tilling to a depth of 12" is appropriate, while another scenario would require tilling to a greater depth to attain the performance standard.

\* Three test plots will be selected with soil-lead levels above 1,000 ppm. Two plots will have soil-lead levels between 1,000 ppm and 2,000 ppm; with one plot tilled to a depth of 18" and the other tilled to a depth of 24". One plot will have soil-lead levels between 2,000 ppm and 4,000 ppm tilled to a depth of 24". These three test plots will be sampled and analyzed using the same protocols and criteria as described above to define the limits of tilling to abate elevated lead concentrations in soil.

### Sampling Plan

All samples shall be collected using a decontaminated hand auger with a plastic insert sleeve. Each insert sleeve core shall be capped and numbered for analysis. No preservative shall be added to the samples.

### Analytical Methods

Soil samples shall be collected in the form of a soil core. These cores shall be analyzed by on-site and/or off-site X-Ray Fluorescence (XRF) to determine total lead concentrations. The XRF analysis will be conducted by either in situ testing or the testing